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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/667.681 | 09/22/2003 | Noriyasu Sakai | 14225-022001 / F1030476US | 9392 |
| 26211 | 7590 | 05/30/2006 | EXAMINER | |
| FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022 | | | GEYER, SCOTT B | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2812 | |

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/667,681

Applicant(s)

SAKAI ET AL.

Examiner

Scott Geyer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,6 and 9-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 3,5,6,9,10 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 050806.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takehara et al. (6,358,776 B1) in view of Lee et al. (5,924,190).

As to **claim 1**, Takehara et al. teach a method of manufacturing circuit devices, as shown in figures 3A-4B. Conductive patterns 5 are formed on a planar body 1. Circuit elements 2 are mounted on the conductive patterns. The circuit elements 2 are sealed in resin 8, using a mold having upper and lower portions 20, 21. The lower mold portion 21 is in contact with the planar body through electrodes 19. After molding, the mounting portions (with circuit elements attached) are separated. Takehara et al. also teach the upper mold portion defining an injection cavity above the planar body. Takehara et al. do not teach the lower mold having an air vent. However, Lee et al. teach a similar chip molding method wherein both the upper mold and the lower mold halves have air vents (see figures 1, 3, 6, 11 or 14). Lee et al. also teach an air release passage that exists beneath the planar body (i.e. the substrate) and the air vents, as can be seen for example in figure 6. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the method of Takehara et al.

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with a mold having air vents in the upper and lower mold portions, as taught by Lee et al. so as to allow for total air escape from both the top and bottom surfaces of the article being molded, which would also reduce or eliminate unwanted air pockets (see also Lee et al., col. 1, lines 65-67, continued to col. 2, lines 1-4).

As to **claim 2**, Takehara et al. teach blocks formed by a plurality of mounting portions arranged in a matrix form, and resin sealing is performed to cover all this chips that are arranged in matrix form on the blocks (see figures 1A-2A).

As to **claim 11**, Lee et al. teach an air vent "striding" over a peripheral pad of the cavity, and the air vent extends from inside the cavity to outside the cavity, as can be plainly seen in figures 1, 3, 6, 11 or 14.

As to **claims 12 and 13**, Lee et al. teach bringing the back face of the planar body into contact with the lower mold which has air vents, and the planar body contacts at least one of the air vents (see figure 1) and air is released through the air vents (see col. 1, lines 65-67, continued to col. 2, lines 1-4).

Allowable Subject Matter

Claims 3, 5, 9 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed May 8, 2006 have been fully considered but they are not persuasive. The applicant's have amended independent claim 1 to recite an air release passage that is beneath the planar body (i.e. substrate) and includes the air vents. However, as can be clearly seen in figure 6 of Lee et al., an air release passageway does exist beneath the substrate and can include the air vents. In other words, there exists a passage by which air can escape the mold cavity after resin is introduced, which includes flowing beneath the substrate and out the side air vents.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Geyer whose telephone number is (571) 272-

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1958. The examiner can normally be reached on weekdays, between 10:00am - 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SBG
May 23, 2006

SCOTT B. GEYER
PRIMARY EXAMINER

SBG 5/23/06